



USDA Foreign Agricultural Service

GAIN Report

Global Agriculture Information Network

Template Version 2.09

Required Report - Public distribution

Date: 12/11/2008

GAIN Report Number: E48143

EU-27

Livestock and Products

Animal Genetic Markets in EU Member States

2008

Approved by:

Kurt Seifarth

U.S. Mission to the EU

Prepared by:

Alexis Gough

Report Highlights:

The EU animal genetics market is important for U.S. exporters. The EU is expected to regulate animal cloning in the foreseeable future, while in the U.S., FDA already put out legislation at the beginning of 2008. Differences between these regulations could lead to problems for U.S. genetics exports. Therefore, this report focuses on livestock genetics markets in the EU Member States.

Includes PSD Changes: No
Includes Trade Matrix: No
Annual Report
Brussels USEU [BE2]
[E4]

Table of Contents

Introduction and purpose	3
Background Law	4
Current Economic Situation	6
Conclusion	8
ANNEX I	8
<i>Bulgaria</i>	9
<i>Denmark</i>	10
<i>Finland</i>	11
<i>France</i>	12
<i>Germany</i>	15
<i>Hungary</i>	17
<i>Romania</i>	18
<i>Spain</i>	19
<i>Sweden</i>	20
<i>The Netherlands</i>	21
<i>OTHER COUNTRIES:</i>	22

Introduction and purpose

This report was drafted in order to obtain a better understanding of the EU livestock genetics market and anticipate potential problems in the future for U.S. genetics trade. As genetics trade is generally a large export for the United States, and the EU a major market, it is important to determine the size of the EU market in livestock genetics and the U.S. market share.

Furthermore, it is important to understand the EU genetics market in light of the current cloning debate. As of January 2008, cloned animal products were approved for food in the United States.¹ It is believed that there is not any food on the United States or EU markets from cloned animals due to an ongoing voluntary moratorium.² Currently, the EU is in the midst of determining how to regulate these products. How the EU will decide to regulate cloning and cloned animal products, may have a significant impact on U.S. animal product exports. U.S. genetics will likely be among the first products impacted.

The EU imports a variety of livestock genetics from the United States including bovine (cattle), porcine (pigs), ovine (sheep), caprine (goats), and equine (horses). Products that are internationally traded are tracked using Harmonized System (HS) Codes. While it would be interesting to determine the EU market for each of these species, the EU and the United States combine several species' genetics under one code and therefore it is not possible to determine exactly how much of one species' genetics enters the EU based on the current HS Coding system.

The major HS categories the United States tracks in the trade of livestock genetics are: bovine semen, non-bovine animal semen, dairy cattle embryos, and non-dairy cattle embryos. In contrast, the EU tracks only bovine semen and "other" under the heading "animal products." This lack of detailed coding is not of much consequence as the largest U.S. export in livestock genetics is bovine semen. Non-bovine genetics are certainly exported to the EU; however, the market is small. For example, although approximately 40% of all meat consumed in the world is pork³, there is little porcine semen traded because it must be used fresh and there are significant losses in freezing the semen.⁴ The United States is not a major exporter of caprine and ovine species because the EU and Australia are the most important producers.⁵

¹ U.S. Food and Drug Administration, *Animal Cloning Risk Management Plan for Clones and Their Progeny*, (15 January 2008). http://www.fda.gov/cvm/CloningRA_RiskMngt.htm. (last accessed 9 December 2008.)

² U.S. Department of Agriculture, Statement by Bruce Knight, Under Secretary for Marketing and Regulatory Programs on FDA Risk Assessment on Animal Clones, *FDA's Final Risk Assessment, Questions and Answers: Management Plan and Industry Guidance on Animal Clones and Their Progeny*, Release No. 0012.08, 15 January 2008). http://www.usda.gov/wps/portal/!ut/p/s.7_0_A/7_0_10B?contentidonly=true&contentid=2008/01/0012.xml. (last accessed 9 December 2008.)

³ Peter Van Home and Robert Hoste for the FAO, *Meat Products: Competition from Low Cost Countries*, The Pig Site, Section 4.2.2, (January 2008). <http://www.thepigsite.com/articles/7/markets-and-economics/2121/meat-products-competition-from-low-cost-countries>. (last accessed 9 December 2008.)

⁴ Information provided by Xavier Audran at US Foreign Agricultural Service, Paris.

⁵ Peter Van Home and Robert Hoste for the FAO, *Meat Products: Competition from Low Cost Countries*, The Pig Site, Section 4.2.2, (January 2008). <http://www.thepigsite.com/articles/7/markets-and-economics/2121/meat-products-competition-from-low-cost-countries>. (last accessed 9 December 2008.)

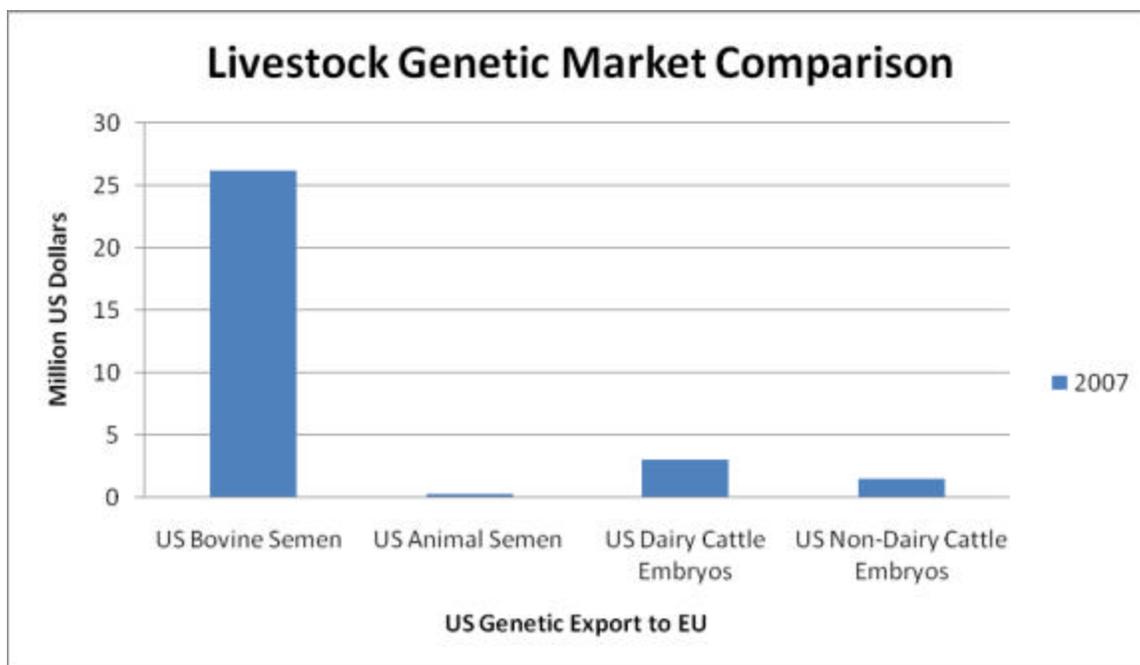


Figure 1: Comparison of U.S. livestock genetic exports to the EU – bovine semen & others⁶

Based on official U.S. export data (see Figure 1 above), U.S. bovine semen represents 85% of the total U.S. genetics exports to the EU. Other animal semen exports to the EU represent less than 1%, dairy cattle embryo exports represent 9.6%, and non-dairy cattle embryo exports represent 4.7% of the total U.S. genetics exports. Because the EU import market for non-bovine genetics is significantly smaller than bovine genetics, this report focuses on bovine semen exports from the United States.

Background Law

Livestock genetics are regulated through a variety of EU directives and decisions. (To view the actual legislation, follow this link to the European Commission website: http://ec.europa.eu/food/animal/semen_ova/index_en.htm.) It is worth noting that the United States and the EU have a veterinary equivalency agreement (VEA). However, animal genetics are currently still under evaluation in the VEA. While it is not applicable now, it is something to keep an eye on because equivalency agreements trump legislation.

Below is a list of pertinent law that relates to livestock genetics trade in the EU. Please note that intra-community trade is not included in the list – only general and importing requirements.

The following directives outline general requirements:

- These EU directives provide general animal health requirements and harmonize the health conditions of the product and the conditions for approval of collection centers:
 - **Bovine Semen:** Directive 88/407/EEC

⁶ Data drawn from Global Trade Atlas for 2007.

- **Bovine Ova & Embryos:** Directive 89/556/EEC
- **Porcine Semen:** Directive 90/429/EEC
- **Porcine Ova & Embryos:** Directive 92/65/EEC
- **Ovine and Caprine Semen, Ova, & Embryos:** Directive 92/65/EEC
- **Equine Semen, Ova & Embryos:** Directive 92/65/EEC

The following decisions apply to imports into the European community:

- These decisions list third countries and/or parts of territories from which EU member states authorize imports of semen/ova/embryos: (Note that APHIS is the U.S. competent authority in regard to collection centers. For more information on centers and certificates, visit the APHIS website: [http://www.aphis.usda.gov/regulations/vs/iregs/animals/.](http://www.aphis.usda.gov/regulations/vs/iregs/animals/))
 - **Bovine Semen:** Decision 2004/639/EC
 - **Bovine Ova & Embryos:** Decision 2006/168/EC
 - **Porcine Semen:** Decision 2002/613/EC
 - **Porcine Ova & Embryos:** Decision 2008/636/EC
 - **Ovine and Caprine Semen, Ova, & Embryos:** Decision 94/388/EC
 - **Equine Semen, Ova & Embryos:** Decision 2004/211/EC
- These directives and decisions list approved collection, storage, and/or production teams in third countries for export of livestock genetics to the EU:
 - **Bovine Semen:** Directive 88/407/EEC
 - **Bovine Ova & Embryos:** Decision 92/452/EEC
 - **Porcine Semen:** Decision 2002/613/EC
 - **Porcine Ova & Embryos:** not harmonized
 - **Ovine and Caprine Semen, Ova, & Embryos:** Decision 2008/635/EC
 - **Equine Semen, Ova & Embryos:** Directive 92/65/EEC
- These decisions outline animal health certificate requirements for importing livestock genetics to the EU:
 - **Bovine Semen:** Decision 2004/639/EC
 - **Bovine Ova & Embryos:** Decision 2006/168/EC
 - **Porcine Semen:** Decision 2002/613/EC

- **Porcine Ova & Embryos:** not harmonized
- **Ovine and Caprine Semen, Ova, & Embryos:** Decision 2008/635/EC
- **Equine Semen:** Decision 96/539/EC
- **Equine Ova & Embryos:** Decision 96/540/EC

Current Economic Situation

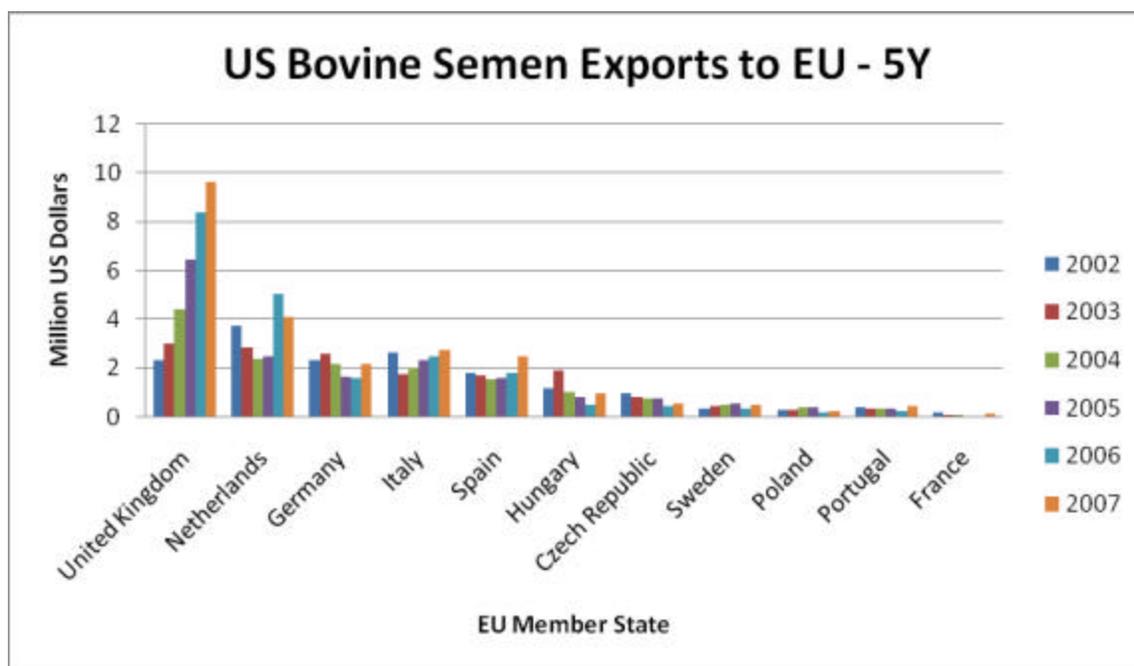


Figure 2: Five Year Official U.S. Bovine Semen Export Data⁷

U.S. export data shows that the market has increased every year in the recent past—increasing by over 2 million US dollars in 2005, and over 3 million US dollars in both 2006 and 2007 from the prior year. EU import data also shows that U.S. livestock genetics imports have increased over the past six years. Data received from the U.S. National Association of Animal Breeders (NAAB) – a U.S. livestock genetics federation believing to represent

⁷ Data drawn from Global Trade Atlas 2002 – 2007. See below for chart with exact numbers:

EU Member State	2002	2003	2004	2005	2006	2007
United Kingdom	2,315,549.00	3,008,123.00	4,398,936.00	6,446,296.00	8,395,209.00	9,650,199.00
Netherlands	3,711,549.00	2,824,178.00	2,355,920.00	2,457,568.00	5,051,933.00	4,073,025.00
Germany	2,288,107.00	2,582,309.00	2,149,470.00	1,633,142.00	1,601,467.00	2,159,767.00
Italy	2,605,145.00	1,741,239.00	2,007,918.00	2,320,562.00	2,468,741.00	2,719,906.00
Spain	1,763,054.00	1,696,220.00	1,514,145.00	1,612,056.00	1,801,747.00	2,436,996.00
Hungary	1,163,251.00	1,881,651.00	970,876.00	820,210.00	511,665.00	935,976.00
Czech Republic	943,015.00	809,030.00	737,879.00	775,002.00	423,216.00	528,678.00
Sweden	329,031.00	445,130.00	491,861.00	547,104.00	353,202.00	452,792.00
Poland	280,683.00	270,943.00	383,609.00	373,403.00	200,408.00	232,788.00
Portugal	380,770.00	322,604.00	328,233.00	340,300.00	234,070.00	421,649.00
France	137,392.00	66,621.00	71,870.00	22,202.00	30,823.00	82,297.00

approximately 95% of U.S. livestock genetics – also indicates growth each year since 2004. (No data prior to 2004 from NAAB was received.)

The top ten markets over the past six years for U.S. bovine semen exports are: the United Kingdom, The Netherlands, Germany, Italy, Spain, Hungary, Czech Republic, Sweden, Poland, and Portugal. (See Figure 2 above.) Based on the data, the U.S. relationship with the United Kingdom is important. Exports to the United Kingdom were over two times those to The Netherlands, which represents the second greatest market for U.S. bovine semen exports, in 2007.

Each country in the top ten has generally increased imports from the United States over the past six years with a few deviations here and there. For example, The Netherlands decreased imports from 2006 to 2007; however, the 2007 numbers are still well above those of 2005. Also, though Germany, Hungary, Czech Republic, Portugal, and Spain all display downward trends for a portion of the last six years, 2007 was a strong year and the numbers increased.

France is included in Figure 2 above because, as one of the major member states, it was expected to have a larger U.S. import market. However, all official U.S. data indicates otherwise.⁸ This may be because U.S. customs data indicates point of entry rather than final destination. Poland is included in Figure 2 because U.S. industry has noted Poland as an emerging market; however, industry has also stated that it can be difficult to trade with.

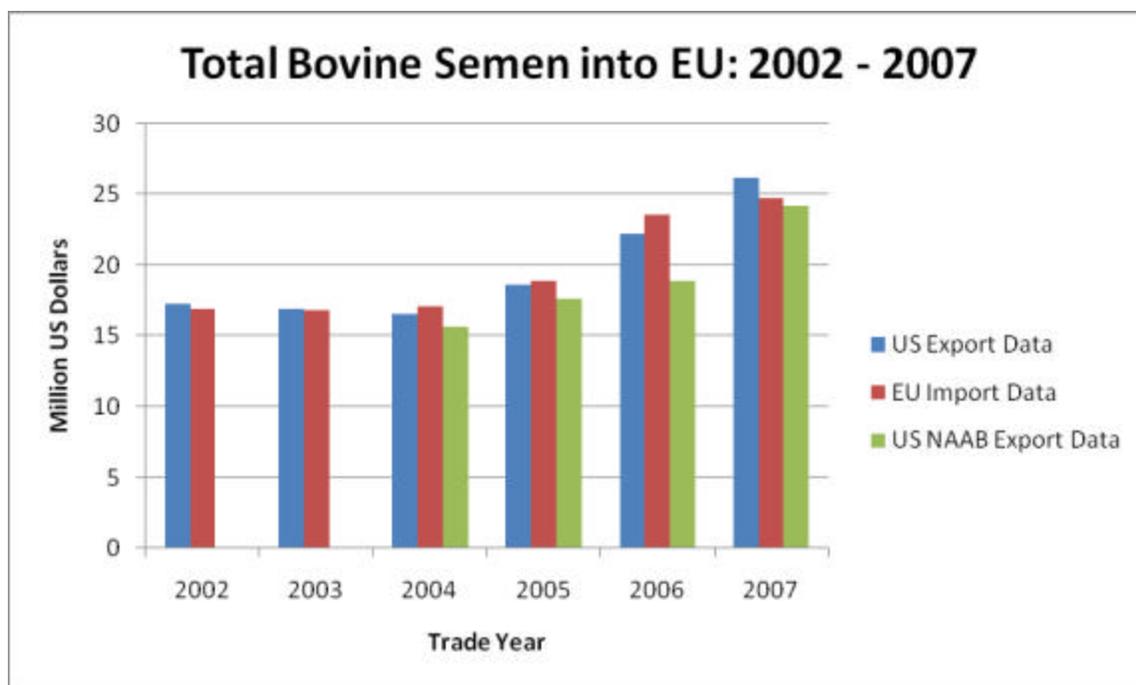


Figure 3: Bovine Semen into the EU market in 2005, 2006, and 2007 – Comparison of three sources⁹

⁸ It should be noted that US industry data indicates France has a much larger role in the US bovine semen export market. US industry data indicates the top destinations for US bovine semen are: The United Kingdom, Italy, France, Spain, and Hungary.

⁹ Data drawn from Global Trade Atlas 2002 – 2007 and US NAAB 2004 – 2007.

Depending on the source tracking bovine semen into the EU, the data is different, as figure 3 illustrates above. The chart above includes U.S. export data, EU import data, and industry data provided by NAAB. NAAB data indicates less U.S. market share than either the United States or EU data. Noting that NAAB does not represent all exports to the EU may reconcile the inconsistency with official report data. The disparity between official U.S. data and official EU data is small considering the high volume of trade in this market. Taking into account the potential for reporting error, possible transshipment, and the possibility that each entity has different year end dates, the data reported by both the EU and the United States seems quite close.

For information on specific member states, please see Annex I, below.

Conclusion

The EU genetics market is important and continues to offer good export opportunities for the U.S. genetics industry as it is a large market. How the EU regulates animal products through cloning legislation, import legislation, etc in the future may impact the U.S. genetics market share in the EU.

ANNEX I

The following information has been collected from FAS/USDA offices located in EU member states. The list is not exhaustive as not every office was able to respond. Please note that the information provided was different for each member state and therefore not uniform. Each office provided information it deemed important for U.S. exporters. As each member state may have additional requirements that go beyond EU legislation, it is recommended that U.S. exporters contact FAS offices covering EU member states they wish to export to.

Bulgaria¹⁰

Member State Market

Currently, the U.S. share of Bulgaria's genetics import market is limited to dairy cattle semen.

Size of Trade

Industry has estimated the market for dairy cattle semen is approximately 400,000 – 500,000 doses from the United States. The total market is perhaps 3 – 4 times larger.

Organization

Currently there are two to three main U.S. genetics importers to Bulgaria and another four to five EU based importers.

Regulation of the Market

The Bulgarian market is regulated by the Ministry of Agriculture and the Agency for Reproduction & Selection in Animal Breeding. Note that the Agency for Reproduction and Selection in Animal Breeding is also an importer of genetics.

Genetics Data

Data on genetics in Bulgaria is not freely available.

Concerns for U.S. Exporters

There is a state monopoly which complicates independent imports by passing various regulations and policies. Also, Bulgarian sensitivities to animal cloning may threaten future U.S. genetic imports.

¹⁰ Information on Bulgaria provided by Mila Boshnakova of the US Foreign Agricultural Service in Bulgaria.

Denmark¹¹

Member State Market

Bovine: There are approximately 550,000 calves produced annually in Denmark. Bovine semen imports approximately equal calf production. There are approximately 16,000 to 17,000 embryos for beef cattle per year (in recent years), of which about 12,000 are of Danish origin. Almost 10% (approximately 55,000) dairy cattle are served with embryos. These are almost exclusively Danish with less than 1% imported.

Porcine: Approximately 29 million pigs are produced annually, created almost exclusively out of Danish semen.

Size of Trade

Semen imports have increased rapidly from 40,000 portions in 2005 to 98,000 in 2006 and 221,000 in 2007. It appears that this will decrease in 2008, but will still be far above the 2006 level. No analysis has been done to explain this trend.

Organization

The major foreign suppliers are (in decreasing order): Genetics (The Netherlands), World Wide Sire (U.S.), Semex (Canada), American Breeders Service (ABS), and KI Semen.

Regulation of the Market

Genetics Data

Genetics data are not readily available in Denmark.

Concerns for U.S. Exporters

There may be an emerging market for sex-sorted cattle semen in Denmark. The EU has decided to abolish EU male animal premiums beginning in 2012. Therefore the economic incentives for producing male animals will diminish. Servicing with sex-sorted semen started in the 3rd quarter of 2007 and amounts to about 10 – 12% of total semen for heifers and 2-3% for dairy cattle. These figures are rapidly increasing and may exceed over 50% in a few years. Currently, The Netherlands exports some sex-sorted semen.

¹¹ Information on Denmark provided by Hasse Kristensen of the US Foreign Agricultural Service in Denmark.

Finland¹²

Member State Market

Bovine: There are approximately 285,000 dairy cows in Finland. Over 40% of the cows in Finland are bred artificially. Finland has much experience with embryo transfer; using both Finnish and imported embryos.

Porcine: There are approximately 175,000 sows in Finland. In specialized pig breeding farms, the percentage of artificial insemination is over 70%.

Size of Trade

Total bovine semen imports to Finland in 2007 amounted to 1.48 million euro; of which U.S. imports amounted to .092 million euro. Finland exported .26 million euro worth of bovine semen; of which .20 million euro was exported to the United States

Organization

The Finnish Animal Breeding Association (FABA) is the trademark for animal breeding and artificial insemination in Finland. It networks with artificial insemination cooperatives nationwide and is an advisory organization with a countrywide network of field advisors. FABA handles the export and import of breeding cattle and pigs, bull and boar semen and cattle embryos to Finland. The export and import of cattle semen and embryos is carried out by FABA on behalf of the artificial insemination cooperatives, however FABA carries out the export and import of boar semen.

Regulation of the Market

The Finnish Food Safety Authority (EVIRA) regulates the animal genetics market in Finland.

Genetics Data

Data on breeding values is freely available in Finland.

Concerns for U.S. Exporters

There are no concerns for U.S. exporters of livestock genetics at this time.

¹² Information on Finland provided by Asa Lexmon of the US Foreign Agricultural Service in Sweden.

France¹³

Member State Market

Porcine: Approximately 99.99% of pig reproduction in France is done through artificial insemination. Approximately 20% is done on farms (i.e. a farmer collects the semen from its hog and inseminates his own sows) and approximately 80% is done through artificial insemination centers. The use of artificial insemination for pigs is recent in France. In 1990, only 200,000 doses of semen were produced. In 2000, the 99.99% was achieved.

Bovine: In 2007, 4.049 million artificial inseminations were performed on French cattle, of which 3.036 million artificial inseminations were performed for dairy cattle and 1.013 million performed for beef cattle. 93% of all artificial inseminations are done with semen from only 6 breeds: 52% from prim'holstein, 12% from Charolais, 11% from Montbeliard, 9% from Normande, 5% from Limousine and 4% from Blondes d'Aquitaine.

	Total Number	% of registered	Animals recorded for performance ¹⁴	Number of artificially inseminated females
Dairy cows	3 799 000	66 %	2 509 615	3 240 155
Beef cows *	4 077 000	19,4 %	790 000	676 025
Dairy sheep	1 483 000	52 %	872 197	474 255
Meat sheep *	4 850 000	7 %	340 608	360 936
Goats *	856 000	25 %	365 713	74 813

Figure 4: Animal population and artificial insemination in France¹⁵

	2007	2006
Number of embryo collected	54,733	56,607
Number of embryo transferable	31282	32,899
In vitro embryo produced	198	212
Number of fresh embryo transferred	21,173	15,027
Number of frozen embryo transferred	12,654	13,506
Total number of embryo transferred to females	33,827	28,533

Figure 5: Embryo Transfer in France

Size of Trade

Total imports by France of bovine semen amounted to \$7.537 million in 2007; of which \$2.703 million were imported from the United States. The United States is the largest supplier to France with a 36% market share. Canada and the UK follow as major suppliers to France. (France imported \$1.206 million worth from Canada and \$1.16 million worth from the UK in 2007.) Total imports by France amounted to \$5.938 million in 2006. Bovine

¹³ Information on France provided by Xavier Audran of the US Foreign Agricultural Service in France.

¹⁴ Animals tracked for better performance in order to improve the genetic profile of the particular breed.

¹⁵ 2006 Data Sources : Institut de l'Élevage, UNCEIA, FCL, FBC, ANIO, CNBL

semen is imported by a handful of French companies. The largest company is BOVEC (<http://www.bovec.fr/>) which imports 90% of the U.S. bovine semen that enters France. Under the French HS code, 0511998510, France imported \$761,000 worth of bovine embryos from the United States, and \$837,000 from Canada in 2007.¹⁶

France is the 5th largest exporter of cattle semen with a global market share of 5.5%. France accounts for 15% of the EU-27 semen exports. In addition, France is a key player in Africa (holding 18% of the market share) and an important one in Latin America (holding 5.3% percent of the market shares). France plays a minor role in the Middle East (1.4%) and East Asia (1.1 %). Total exports of bovine semen from France amounted to \$14.288 million in 2007 (of which \$666,000 worth of semen was exported to the United States) and \$11.915 million in 2006.

Organization

Porcine: There are two major cooperatives which cover 80% of the commercial artificial insemination market for porcine in France: COBIPORC (<http://www.cobiporc.com>) and Genes Diffusion (<http://www.genesdiffusion.com/Porcin/default.aspx>). There are smaller cooperatives also, such as: Amelis (<http://www.amelis.fr>) and France-Hybrides, a subsidiary of the Hendryx-Genetics Canadian Group (<http://www.france-hybrides.com/fr/index.html>). The hogs used are owned by breeding organizations such as NUCLEUS (<http://www.nucleus-sa.com/GB/index.html>), Gene + (<http://www.geneplus.com>), and ADN. The breeding organizations do breed research, improvement, and development. In 2007, there were 3796 hogs registered which produced 5.737 million doses of semen. The total market size is estimated to be between 29 and 34 million Euros.

Bovine: Beginning in 2007, the French genetic market was reorganized. The overall market strategy is defined by an umbrella organization, France Génétique Elevage, which gathers representatives from artificial insemination centers, herdbooks, and farmers, among others.

- Breed selection organizations define breed improvement goals and keep the genealogical books (herdbooks) for each breed.
- 20 Selection organizations own the bulls and manage the breed improvement programs. They are mostly cooperatives and they sell semen to the artificial insemination centers or other selection organizations. Most organizations do not directly administer the selection process or the semen collection. Instead they delegate those tasks to local breeder cooperatives. However, the organizations directly handle the selection of the bull's mother, the mating, the recruiting of promising young bulls, and the handling of testing stations. Major organizations are: URCEO: <http://www.urceo.fr/> , AMELIS: <http://www.amelis.fr> , Interselection: <http://www.isnormande.com/> . For a complete list, view the following link: http://www.unceia.fr/internet/annuaire/i_annuaire_union.asp
- There are 42 artificial insemination centers which are mainly cooperatives. They purchase the semen from the Selection organizations. Please see the following link for a complete list: http://www.unceia.fr/internet/annuaire/i_annuaire.asp
- 17 breeds are involved in the cattle genetic improvement scheme: 8 dairy breeds : prim Holstein, Montbeliarde, Normande, Abondance, Brune, French Simmental, Pie Rouge des Plaines, Tarentaise; and 9 beef breeds : Charolais, Limousine, Blonde, Inra 95, Salers, Aubrac, Rouge des Prés, parthenaise, Gasconne, the last three are minor breeds.

¹⁶ Please note that this comparison is difficult with other trading partners as GTI data only goes to 05119985 (Animal Products, N.E.S.; Dead Animals, Unfit For Human Consumption (Excl. Fish, Crustaceans, Mollusks And Other Aquatic Invertebrates) which may include other products than embryos.

The French genetics organization for cattle is characterized by the involvement of a large number of breeders (approximately 100 000) in the selection of the various breeds, a very wide basis of selection (registration and performance recording for a great number of animals), and intensive progeny testing of males used for artificial insemination.

Regulation of the Market

The market is regulated by EU legislation and by French regulations. The Ministry of Agriculture and Fisheries is the overseeing authority of the sector. Testing and improvement rules are developed by the Breed Selection Organizations and approved by the Ministry of Agriculture.

Genetics Data

There is little market information available as the Ministry of Agriculture and Fisheries does not publish any quantitative data on the cattle genetics market. However, the various genetic organizations have websites with useful information: <http://www.france-genetique-elevage.fr> (French cattle genetic umbrella organization – some brochures in English) and <http://www.unceia.fr/> (French AI umbrella organization).

Concerns for U.S. Exporters

There is little to no trade for pig semen as it must be used fresh and there are losses in freezing. The lifespan for a semen dose is 48 to 68 hours. There is limited exchange of frozen semen and this exchange is mainly used for R&D purposes. In 2007, there was only 120,000 Euros worth of pig semen exports for the entire French genetics industry. As of today, cloning is not considered as a major issue by the French cattle industry. However, the cattle industry remains vigilant on the issue. Studies show that consumers mistrust cloning (and some consumers oppose it altogether). Furthermore, publicity on this issue may have the potential to harm the industry as badly as the mad cow crisis harmed it in the 1990s. Some contacts have mentioned that they would support an EU ban on imported semen or embryos that could not be guaranteed as clone-free. The offspring issue has not been openly discussed in the French cattle industry.

Germany¹⁷

Member State Market

Bovine: There are 22 artificial insemination centers in Germany and 101,961 herds that practice artificial insemination. In 2007, there were 4,414,910 first inseminations in total. Of those, 175,405 were beef cattle, 41,475 were rare breeds, and 4,198,030 were dairy and dual purpose dairy/beef cattle breeds. Germany exported 2,523,187 semen doses in 2007.¹⁸ In 2007, Germany collected 28,012 embryos. Of those 16,305 were suitable for transfer and 13,929 were actually transferred. Of those transferred, 5,145 were fresh and 8,784 were frozen.

Porcine: In 2005, there were 5,482,399 double-doses of pig semen.¹⁹

Size of Trade²⁰

Bovine:

IMPORT	2006		2007		Jan/sep08	
	QTY-SPEC	1000-\$	QTY-SPEC	1000-\$	QTY-SPEC	1000-\$
U.S.A.	1,125,555	2,559	992,298	3,090	603,447	2,870
CANADA	282,313	1,714	303,163	2,498	262,251	1,982
UNITED KINGDOM	6,197	86	6,808	269	76,003	1,624
NETHERLANDS	274,273	1,696	228,305	1,672	132,785	980
SWITZERLAND	24,595	135	40,528	347	26,062	254
AUSTRIA	25,309	107	15,965	134	19,390	210
FRANCE	10,326	129	8,470	137	3,609	117
AUSTRALIA	15,797	119	12,729	107	5,904	84
NORWAY	6,923	26	6,797	30	9,341	64
HUNGARY	3,576	26	2,952	25	34,346	52
ITALY	29,612	175	2,694	34	12,677	46
DENMARK	4,923	35	-	-	275	10
BELGIUM	19,061	64	301	8	2,988	8
INTRA-EU-27	529,958	2,477	266,428	2,295	282,174	3,049
EXTRA EU-27	1,455,933	4,556	1,355,515	6,072	908,805	5,255
WORLD	1,985,891	7,032	1,621,943	8,368	1,190,979	8,303

Figure 6: German Bovine Semen Import Statistics²¹

In 2006, Germany imported \$2,559,000 of cattle semen from the U.S. and exported \$513,000 of cattle semen to the United States.

¹⁷ Information on Germany provided by Sabine Lieberz of the US Foreign Agricultural Service in Germany.

¹⁸ German Cattle Breeding Association (ADR)

¹⁹ Central Federation of German Hog Production (ZDS)

²⁰ German Office of Statistics

²¹ *Id.*

In 2007, Germany imported \$3,090,000 of cattle semen from the United States and exported \$285,000 of cattle semen to the United States.

During the first portion of the current year (January through September 2008), Germany imported \$2,870,000 of cattle semen from the United States and exported \$384,000 of cattle semen to the United States.

Organization

Porcine: 358 pig breeders are organized in local/regional breeding associations. In addition, 10 breeding companies, mostly subsidiaries of international breeding companies are active on the German market. The largest companies (in order of importance) are: PIC Germany GmbH, Federal Hybrid Program (BZHP), Huelsenberger Zuchtschweine GmbH, JSR Hybrid, Hypor Germany, United Pig Breeders Germany, TOPIGS Germany

Regulation of the Market

Regulations are harmonized in the EU and implemented in Germany by means of the "German Animal Breeding Law" (Tierzuchtgesetz).

Genetics Data

German market information is available for a fee. However, other data is difficult to obtain.

Concerns for U.S. Exporters

Animal breeders would be eager to use cloning for breeding purposes but are hesitant to do so because they anticipate negative consumer reactions.

Hungary²²

Member State Market

Hungary is concerned, almost exclusively, with bovine semen. The size of the dairy and beef cattle semen market is estimated to be approximately \$6.5 million. The dairy cattle stock is 90 percent American and Canadian Holstein.

Embryo transfer is used in a low volume since the 1990's and is still under research and development.

Size of Trade

Total imports to Hungary were \$2 million in 2005, \$1.7 million in 2006, and \$2.3 million in 2007. Approximately 40 – 45% of the annual 260,000 – 300,000 doses of semen are from the U.S... Important semen sources also include: Canada, Germany, The Netherlands, Spain, and Italy. In the last few years, the introduction of sex-selected semen increased U.S. exports to Hungary, although the total market is shrinking.

Organization

Imports are made by the Hungarian partners of the major U.S. genetics firms: World Wide Sires, ABS, and Alta Genetics. Canadians and Europeans keep top bulls in Hungary to supply the market, but Americans do not.

Regulation of the Market

Prior to Hungary's EU membership, U.S. exports frequently met unfair trade practices of authorities such as: extra laboratory fees, unnecessary certification requirements, etc. Now that Hungary follows the common EU rules, trade is smoother. The Ministry of Agriculture and Rural Development, the Central Agricultural Office (MgSzH) – the animal health and herdbook authority, and the Hungarian Holstein Friesian Association record and inspect trade. There is no approval or licensing system.

Genetics Data

Genetics data are not readily available in Hungary.

Concerns for U.S. Exporters

At the moment, there are no particular trade related concerns. Hungarian importers do not think of cloning as a major issue in cattle breeding. Some importers think cattle genomics – progeny statement tests by genetic mapping – is more important in preserving the competitiveness of U.S. bovine genetics.

²² Information on Hungary provided by Ferenc Nemes of the US Foreign Agricultural Service in Hungary.

Romania²³

Member State Market

Romania primarily imports dairy cattle genetic material and is currently looking for better breed performance. In 2007, frozen semen was included in a national support program to encourage animal genetic improvement for enhancing the competitiveness of the Romanian milk sector.

Though Romanian farmers are not very familiar with embryonic transfer, U.S. industry has expressed interest in developing this area.

Size of Trade

2007 Romanian data indicates the United States represented 65% of total genetic imports to Romania. 12% came from Canada, 6% from France, 5% from Austria, 3% from the UK, and a few others.

Overall, imports to Romania have increased 160%. The United States remains the leader among exporting countries accounting for 45% of total frozen semen imports to Romania. Germany, Canada, and Switzerland all have increased imports to Romania as well.

Organization

The following companies import frozen bovine semen to Romania: World Wide Sires, Alta Genetics, Semex, Aberrekin, Holland Genetics, Semtest BVN Targu Mures, and Semtest Craiova.

Romanian organizations to be aware of are: the National Agency for Animal Reproduction (<http://www.anarza.ro>) and the Romanian Association for Milk Industry, APRIL (http://www.april.org.ro/index.php?option=com_frontpage&Itemid=1).

Regulation of the Market

The Romanian market is regulated by the National Sanitary-Veterinary and Food Safety Authority (NSVFSA), which is supervised by the Minister of Agriculture.

It is recommended that companies that wish to begin importing to Romania contact the National Agency for Animal Reproduction as they regulate and approve technical dossiers of all products in genetics.

Genetics Data

There is very little genetics data published in Romania.

Concerns for U.S. Exporters

Romania no longer requires supplementary testing on frozen bovine semen upon importation because import requirements are now harmonized.

NSVFSA and APHIS are currently working together to align veterinary certificates for embryo importation.

²³ Information for Romania supplied by Ioana Ionescu of the US Foreign Agricultural Service in Romania.

Spain²⁴

Member State Market

The Spanish genetics market is, almost exclusively, bovine semen. The dairy cattle stock of the country is around 75% American and Canadian Holstein. Galicia is a main production area, comprising about 50% of Spain's dairy cattle. There were about 980,000 dairy cows in Spain in 2007. The 2007 Herdbook indicates that 727,000 female dairy cows were registered over 8,800 farms.

Size of Trade

Spain imported \$8.47 million worth of bovine semen in 2007, \$7.3 million in 2006, and \$7.05 million in 2005. January through August 2008 imports total \$7.4 million, which is a 31% increase compared to the same period in 2007. Imports to Spain came mainly from France, Canada, and the United States. Italy, The Netherlands, Germany, and Belgium also export to Spain.

Spain is currently consolidating its dairy sector. While there are fewer cows, U.S. sales are steady as the United States makes up an increasing share of genetics sales. The first half of 2008 show a 42% increase in U.S. sales when compared with the same period in 2007.

Organization

The Spanish market is divided into domestic companies and importers, which are generally partners of major foreign genetics firms. In Spain, there are three domestic companies: Aberekin (Euskadi), Xenetica Fontao (Galicia), and Ascol (Asturias). Regional governments also participate. Foreign importers include 4 U.S. partners, 1 Canadian, and 5 from other member states including Italy, France, The Netherlands, and Germany.

Regulation of the Market

The market is regulated by the common EU trade legislation.

Genetics Data

There is very little public information available as the Ministries do not publish any related data.

Concerns for U.S. Exporters

Genetics importers to Spain must compete with domestic companies, which often are the property of regional governments. These companies therefore have access to public money that can be invested in promotion, investigation, etc.

Currently Spanish importers do not think of cloning as a major issue. However, the resolution adopted by the European Parliament calling for a ban on the cloning for food supply did not set a positive precedent for the future in Spain.

²⁴ Information on Spain provided by Arantxa Medina of the US Foreign Agricultural Service in Spain.

Sweden²⁵

Member State Market

Bovine: There are approximately 360,000 dairy cows in Sweden. Artificial insemination is widely used for approximately 90% of the dairy cows.

Porcine: There are approximately 175,000 sows in Sweden. Artificial insemination is widely used for approximately 90% of the breeding sows and about 75% of the non-breeding sows.

Size of Trade

In 2007, Sweden imported 3.08 million euro worth of bovine semen; of which 280 thousand euro was imported to Sweden from the United States. Sweden exported 1.43 million euro worth of bovine semen globally; 200 thousand euro worth of bovine semen was exported to the United States.

Organization

Bovine: There are a few leading breeding associations in Sweden that dominate the genetic markets. The largest one for cattle is Viking Genetics. Viking Genetics is a merger between Svensk Avel and Dansire and was established in January 2008. Viking Genetics has more than 20,000 members in Denmark and Sweden and an annual sale of almost 3 million doses of semen. The association tests more than 500 bulls annually and is among the world's largest breeding associations. Another leading cattle breeding company in Sweden is Skanesemin. In addition, there are a few companies that import and sell semen.

Porcine: Quality Genetics is the leading, officially approved pig breeding organization in Sweden that focuses on breeding, livestock sales and artificial insemination stations. The annual sale of semen amounts to 622,400 doses. Another breeding company is Avelspoolen which distributes about 220,000 doses per year.

Regulation of the Market

The Swedish Board of Agriculture (BOA) regulates the animal genetics market. The BOA regulates the imports and operations of live animals, semen, and embryos. In addition to official import requirements, BOA is recommending Swedish importers of live animals, semen, and embryos follow the guidelines of the industry's voluntary import control program, SDS (Swedish Animal Farmers Protective Infection Control.) SDS informs importers of animals, semen, and embryos about precautionary actions that should be taken and controls that these actions are taken. For example, in order to lower the risk of spreading infectious diseases, SDS recommends importing semen and embryos instead of live animals. SDS has issued special certificates for semen imports requiring extra tests of the semen donator. Please note that this certificate is not officially required but the importer has the right to require it. SDS also recommends that live pigs and pig semen are imported from Finland or Norway rather than Denmark. Most importers apply SDS guidelines. This may inhibit trade of live animals but encourages imports of semen and embryos.

Genetics Data

Data on breeding values is freely available in Sweden.

Concerns for U.S. Exporters

There are no concerns for U.S. exporters of livestock genetics at this time.

²⁵ Information on Sweden provided by Asa Lexmon of the US Foreign Agricultural Service in Sweden.

The Netherlands²⁶

Member State Market

Bovine: In 2007, CRV, which sells bovine genetics, is estimated to have held 70% of the Dutch market for bovine genetics. Total sales for CRV in 2007 were 57 million euro. 2.4 million bovine inseminations were supplied in 2007.²⁷

Porcine: In 2007, The PICTURE Group is estimated to have held 85% of the Dutch market for swine genetics. Total sales for the PICTURE Group in 2007 were 31 million euro. 3.7 million swine inseminations were supplied in 2007, of which The PICTURE Group supplied 3.4 million doses.²⁸ The PICTURE Group and CRV operate internationally and therefore the total Dutch market cannot be extrapolated from these figures.

Size of Trade

7.1 million euro of bovine semen was imported to The Netherlands in 2007; of which 3 million euro was from the United States. The Netherlands exported 20.2 million euro of bovine semen.

Organization

Bovine: Cooperative CRV has a 70% market share in The Netherlands and 5% of the global market for dairy and beef cattle. Altapona is a large, rapidly growing international cattle breeding organization.

Porcine: The Cooperative PICTURE Group has an 80% market share in the Netherlands and 8 – 10% of the global market for swine.

The Netherlands has approximately 10 – 20 smaller artificial insemination organizations in bovine and swine. The large pig and cattle breeding organizations have in house or outsourced, independent research units. Applied research and development and breeding programs of the major organizations (including poultry) account for 15 million euro annually.²⁹

Regulation of the Market

The Netherlands is regulated under the harmonized EU standards which are implemented by the Ministry of Agriculture, Nature and Food Quality.

Genetics Data

Genetics data is freely available in The Netherlands, partly upon payment.

Concerns for U.S. Exporters

The industry in the Benelux is avoiding cloning techniques as it does not see the added value and is anxious about consumer reactions. If the use of cloning techniques becomes widespread, or even is applied in a limited fashion in the U.S. sector, exports may be negatively affected to the Benelux region.

²⁶ Information on The Netherlands supplied by Bob Flach of the US Foreign Agricultural Service in The Netherlands.

²⁷ CRV Annual Report

²⁸ The PICTURE Group Annual Report

²⁹ FABRE-TP (Farm Animal Breeding and Reproduction Technology Platform)

OTHER COUNTRIES:**Belgium³⁰****Size of Trade**

2.1 million euro of bovine semen was imported to Belgium in 2007; of which 0 was imported by the United States. Belgium exported 1.6 million euro of bovine semen. The Vlaamse Rundveevereniging (VRV), the Flemish branch of the joint venture with the Dutch CRV, is dominating the Belgian cattle semen market.

Regulation of the Market

Belgium is regulated under the harmonized EU standards which are implemented by the Ministry of Agriculture, Nature and Food Quality.

Concerns for U.S. Exporters

The industry in the Benelux is avoiding cloning techniques as it does not see the added value and is anxious about consumer reactions. If the use of cloning techniques becomes widespread, or even is applied in a limited fashion in the U.S. sector, exports may be negatively affected to the Benelux region.

Czech Republic³¹**Member State Market**

531,193 first artificial inseminations were carried out in 2007. This was 10,377 less than the previous year.³²

Size of Trade

The most frequently used black and white Holstein bulls were from the United States and Holland whose share in first inseminations with semen of proven bulls was 44.6% and total number of inseminations was 41.9%. Semen was also imported from Canada, Germany, France, and Italy.³³

³⁰ Information on Belgium supplied by Bob Flach of the US Foreign Agricultural Service in The Netherlands.

³¹ Information on the Czech Republic provided by Jana Mikulasova of the US Foreign Agricultural Service in the Czech Republic.

³² Holstein Cattle Breeders Association of the Czech Republic, *Artificial Insemination in 2007, Annual Report 2007*, Section 5, pages 12 – 13, (2007).

³³ *Id.*

Visit our website: our website <http://useu.usmission.gov/agri/provides> a broad range of useful information on EU import rules, food laws, agriculture and trade policy. It enables easy access to USEU reports, trade and other practical information.

E-mail: AgUSEUBrussels@fas.usda.gov

Related reports from USEU Brussels with info on EU policies:

Report Number	Title	Date Released
E48116	Dairy and products - Annual	10/27/08
E48094	Livestock – Annual	08/22/2008
E48084	Review of the animal cloning situation in the EU	06/30/08
E48006	EFSA releases Draft Opinion on Animal Cloning	01/18/2008

These reports can be accessed through our website <http://useu.usmission.gov/agri/> or through the FAS website <http://www.fas.usda.gov/scriptsw/attacherep/default.asp>.